Right-hemisphere damage (RHD) following stroke is well known to affect pragmatic communication skills. Pragmatic disturbances include difficulty preserving the macro-structure and organization of discourse (Hough, 1990; Joanette, Goulet, Ska & Nespoulous, 1989); impaired turn-taking and appreciation of the listener's perspective (Kaplan, Brownell, Jacobs & Gardner, 1990; Myers, 1994); reduced topic maintenance (Prutting & Kirchner, 1987) and verbal expression characterized as tangential/verbose (Myers, 1998) and "monotone" or conversely, hypermelodic (Tompkins, 1995). Persons with RHD may have trouble sending or receiving information via facial expression (Blonder, Bowers & Heilman, 1991); establishing and maintaining eye contact (Myers, 1994; Tompkins, 1995) or spontaneously using gesture (Tompkins, 1995). Furthermore, persons with RHD may have trouble interpreting indirect requests/figurative language (Tompkins, 1995), drawing inferences, especially if required to revise initial interpretations (Brownell, H. H., Potter, H. H., Bihrle, A. M. & Gardner, H., 1986; Kaplan, Brownell, Jacobs & Gardner, 1990; Tompkins, C. & Mateer, C., 1985) and understanding meaning conveyed through the intonational and prosodic contours of spoken language (Starkstein, Federoff, Price, Leiguarda & Robinson, 1994).

Assessment of pragmatic communication skills following RHD typically involves the rating of appropriate language use within the context of a clinical setting by a speech-language pathologist (SLP). Normative data for these kinds of ratings is non-existent. The perspective of people familiar with the stroke survivor's premorbid communicative style and skills may be particularly valuable in distinguishing between a pragmatic communication disorder and behaviors consistent with that person's premorbid communication style. When comparing family and SLP ratings of pragmatic communication skills following RHD, there is evidence to suggest SLPs are likely to rate behaviors as inappropriate that family members report have not changed as a result of the stroke (Baron, Goldsmith & Beatty, 1999). While some investigators have expressed concern over the poor level of agreement among multiple observers who judged the pragmatic appropriateness of identical communication samples (Ball, Davies, Duckworth, & Middlehurst, 1991), a substantial level of disagreement is not surprising. It is likely that judgments concerning pragmatic communication behaviors will be influenced by each rater's own expectations and cultural-linguistic biases (Goldsmith, 1994; Prutting & Kirchner, 1987). Frequently, SLPs need to assess the pragmatic communication skills of patients who have cultural-linguistic backgrounds that are different from their own. In the setting in which this study was conducted, Caucasian SLPs frequently need to rate the pragmatic communication skills of African-American patients.

Although not spoken by all African-Americans at all times, African-American English (AAE) is spoken primarily by African-Americans, most frequently those of working class background (Dillard, 1973; Iglesias & Anderson, 1993). AAE is a dialect of Standard American English (SAE). AAE consists of systematic rule-governed phonologic, grammatical, syntactic, semantic and pragmatic language systems (Terrell & Terrell, 1998). Speakers may vary their use of AAE, depending on context. Use of AAE has been found to be influenced by age, geographic location, occupation, education and income (Wyatt, 1991).

Pragmatic communication characteristics of speakers of AAE which have been described in the literature include code switching, for instance, between AAE and SAE (Seymour & Ralabate, 1985), call and response (choral response to an utterance given by a single person), wit and sarcasm (creative verbal insults/actual sarcasm) (Terrell & Terrell, 1998), indirect eye contact (Taylor, 1992; Tiegerman-Farber, 1995), the variable use of a topic-associated (vs. topic-centered) narrative style (Hicks, 1991; Hyon & Sulzby, 1992) and turn taking rules inclusive of

acceptable forms of interruption (Terrell & Terrell, 1998; Boyd & Caesar, 1994).

The purpose of this study was to determine if a significant difference exists between the agreement of Caucasian SLPs with African-American families AND the agreement of Caucasian SLPs with Caucasian families, when rating pragmatic communication behavior following right-hemisphere stroke.

METHODOLOGY

Procedure

The Pragmatic Communication Skills Clinician Rating Scale is part of an evaluation designed for stroke survivors with RHD (see Baron, Goldsmith & Beatty, 1999 for a description of its development; see Tables 1 and 2 for reliability and validity data). It consists of 18 pragmatic communication behaviors, each of which is rated on a three point scale of "appropriateness." Family members or significant others are asked to fill out the version of the same scale that has been designed for their use. This version asks family members to rate the same 18 pragmatic communication behaviors on a three point scale of "change" from pre-stroke communication behavior. Both versions offer a fourth response option of "no opportunity to observe." For all cases in this study, SLP and family rating scales were completed within the first two weeks after admission to a rehabilitation hospital, with ratings separated by no more than four days. Both SLPs and family members completed the rating scales without awareness of the other's ratings.

Subjects

Completed rating scales from both SLPs and family members were collected for 68 patients. Forty-one patients (60.3%) were African-American and 27 (39.7%) were Caucasian. Thirty-nine (57.4%) were male and 29 (42.6%) were female. All but four were right-handed and had recently sustained a right-hemisphere stroke, as confirmed by computerized tomography (CT) scan, magnetic resonance imaging (MRI) or physician examination. Average time post onset (TPO) was 2.4 weeks (range 1-12; SD 1.90), with 90% of the patients within the first 3 weeks post-onset. Patients' average age was 66.4 years (range 30-91; SD 13.3) and average education 12.8 years (range 2-22; SD 4.09). Most of the patients were diagnosed with mild-moderate right-hemisphere cognitive-communication disorder, and enrolled in speech-language pathology treatment.

RESULTS

African-American and Caucasian groups were compared according to descriptive variables (table3) to determine if they differed significantly according to any of these variables. Caucasian subjects were significantly more often male compared with the African-American subjects (Chi square=5.12, p=.02). No significant differences between African-American and Caucasian groups regarding TPO (t=.64, p=.527) and age (t=.55, p=.586) were demonstrated. Caucasian subjects had significantly higher levels of education than African-American subjects (t=-5.2, p<.001). In order to determine if educational level significantly influenced the manner in which SLPs' ratings compared with family members' ratings, Chi square tests were performed across educational levels (12 years or less vs. greater than 12 years) for each pragmatic behaviour. None exhibited statistical significance after performing Yate's corrections.

In order to compare agreement rates between SLPs and family members by cultural-linguistic background, the "3-point" appropriateness/change ratings were collapsed with regard to degree of appropriateness/change. These binary ratings ("inappropriate" or not for SLPs, "change" or not for family) were compared for each patient, and rates of agreement are summarised in table 4. The rate of agreement between SLP and Caucasian family members is

higher for 13/18 behaviours, while there was a higher rate of agreement for comparisons between SLP and African-American family members on the five remaining behaviours. Chi square tests were performed across cultural background categories for each item, and none exhibited statistical significance.

The rate of disagreement types (family rates "unchanged" when SLP rates 'inappropriate" vs. family rates "changed" when SLP rates "appropriate") were compared across cultural-linguistic background (table 5). African-American families were more likely than Caucasian families to rate a behaviour "unchanged" that the SLP had rated "inappropriate." Disagreement followed this pattern for 11/18 behaviours for African-American families and 7/18 behaviours for Caucasian families. Caucasian families were more likely than African-American families to rate a behaviour "changed" that the SLP had rated "appropriate." Disagreement followed this pattern for 11/18 behaviours for Caucasian families and 7/18 behaviours for African-American families. Meaningful examination of the statistical significance of these comparisons cannot be performed due to the relatively small number of cases.

Clinical implications of these patterns of agreement/disagreement will be discussed.

Table 1.

Inter-rater reliability for the Pragmatic Communication Skills Clinician Rating Scale

Items	Kappa	P value
N=27		
Q1. Conciseness	0.462	**0.002**
Q2. Topic selection	0.649	**<0.001**
Q3. Discourse organization	0.440	**0.015**
Q4. Integration of incoming information	0.601	**0.002**
Q5. Topic maintenance	0.604	**0.001**
Q6. Interpretation of non-literal meaning	0.182	0.338
Q7. Egocentrism	0.609	**0.001**
Q8. Appreciation of listener perspective	0.250	0.194
Q9. Turn-taking	0.640	**<0.001**
Q10. Topic shifting	0.687	**<0.001**
Q11. Redundancy	0.707	**<0.001**
Q12. Eye contact	0.533	**<0.001**
Q13. Facial expression	0.436	**0.001**
Q14. Proxemics	-[a]	-
Q15. Prosodic/intonational expression	0.357	**0.021**
Q16. Gestural communication	-[b]	-
Q17. Interpretation of facial expression	0.433	**0.003**
Q18. Interpretation of intonation/prosody	1.000	**<0.001**

[a] No observations

[b] No kappa statistic was computed due to a constant value.

- Inter-rater reliability of 14 items range from moderate to excellent (0.357 to 1.0).
- Inter-rater reliability for item 6 (0.182) and 8 (0.250) were relatively low and not statistically significant.
- Since the expression for proxemics (Q14) was not observed in the majority of the patients, kappa statistics were unable calculated.

Table 2.

Correlation of the NRH Pragmatics Rating Scale with the RICE-R

			total score for NRH Pragmatics Communication Rating Scale	total score for RICE-R
Spearman's rho	total score for NRH Pragmatics Communication Rating Scale	Correlation Coefficient	1.000	.958**
		Sig. (2-tailed)	.	.000
		N	27	26
	total score for RICE-R	Correlation Coefficient	.958**	1.000
		Sig. (2-tailed)	.000	.
		N	26	27

**Correlation is significant at the 0.01 level (2-tailed)

Table3.

Subject variables according to cultural-linguistic background.

Variable	African-American	Caucasian
n	41	27
Gender: Male	(19)46%	(20)74%
Female	(22)54%	(7)26%
TPO (weeks)	2.56 (sd 2.23)	2.26 (sd 1.29)
Age (years)	67.15 (sd 13.00)	65.33 (sd 13.87)
Education (years)	11.00 (sd 3.40)	15.41 (sd 3.40)

Table 4.

Comparison of Agreement Rates Between SLP and Family Raters on Pragmatic Behaviours by Cultural-Linguistic Background

Pragmatic Behaviour	N	Overall agreement between SLP and Family Raters	Agreement between SLP and **African American** family raters	Agreement between SLP and **Caucasian** family raters
Conciseness	67	62.7%	61.0%	**65.4%**
Topic selection	68	72.1%	**73.2%**	70.4%
Discourse Organisation	66	66.7%	**70.7%**	60.0%
Integration of incoming info.	66	63.6%	53.8%	**77.8%**
Topic maintenance	66	60.6%	**62.5%**	57.7%
Interpretation of nonliteral meaning	56	55.4%	52.9%	**59.1%**
Egocentrism	67	70.1%	67.5%	**74.1%**
Appreciation of listener perspective	63	68.3%	**68.4%**	68.0%
Turn taking	66	62.1%	58.5%	**68.0%**
Topic shifting	62	69.4%	**73.0%**	64.0%
Redundancy	61	65.6%	64.9%	**66.7%**
Eye contact	67	64.2%	60.0%	**70.4%**
Facial expression	66	60.6%	57.5%	**65.4%**
Proxemics	33	84.8%	78.9%	**92.9%**
Prosodic expression	64	73.4%	68.4%	**80.8%**
Gestural communication	54	59.3%	54.5%	**66.7%**
Interpretation of facial expression	49	69.4%	63.3%	**78.9%**
Interpretation of Intonation	57	77.2%	74.3%	**81.8%**

***Bolding** indicates greater frequency (African-American vs. Caucasian) for each behaviour.

Table 5.

Comparison of Frequency of Disagreement Types Between SLP and Family Raters on Pragmatic Behaviours by Cultural-Linguistic Background (African-American: Caucasian)

Pragmatic Behaviour	N	Overall disagreement between SLP and Family Raters	Family unchanged—SLP inappropriate	Family changed—SLP appropriate
Conciseness	25	37.3%	68.8%:**77.8%**	**31.3%**:22.2%
Topic selection	19	27.9%	**90.9%**:50.0%	9.1% :**50%**
Discourse Organisation	22	33.3%	**83.3%**:70.0%	16.7%:**30.0%**
Integration of incoming info.	24	36.4%	77.8%:**100%**	**22.2%**: 0%
Topic maintenance	26	39.4%	73.3%:**81.8%**	**26.7%:**18.2%
Interpretation of nonliteral meaning	25	44.6%	62.5%:**66.7%**	**37.5%:**33.3%
Egocentrism	20	29.9%	**84.6%**:71.4%	15.4%:**28.6%**
Appreciation of listener perspective	20	31.7%	**50.0%**:37.5%	50.0%:**62.5%**
Turn taking	25	37.9%	82.4%:**100%**	**17.6**:0%
Topic shifting	19	30.6%	80.0%:**88.9%**	**20.0%:**11.1%
Redundancy	21	34.4%	**53.8%**:37.5%	46.2%:**62.5%**
Eye contact	24	35.8%	81.3%:**87.5%**	**18.8%**:12.5%
Facial expression	26	39.4%	**88.2%**:55.6%	11.8%:**44.4%**
Proxemics	5	15.2%	**75.0%**: 0%	25.0%:**100%**
Prosodic expression	17	26.6%	**83.3%**:80.0%	16.7%:**20.0%**
Gestural communication	22	40.7%	**33.3%**:14.3%	66.7%:**85.7%**
Interpretation of facial expression	15	30.6%	**45.5%**:25.0%	54.5%:**75.0%**
Interpretation of Intonation	13	22.8%	**66.7%**:50.0%	33.3%:**50.0%**

***Bolding** indicates greater frequency (African-American vs. Caucasian) for each behaviour for each type of disagreement.

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